HUNT, WAITE & FLINT,

RODNEY HUNT. JAMES H. WAITE. DAVID B. FLINT.

MANUFACTURERS OF WOOL MACHINERY,

ORANGE, MASS.

Manufacturers of Dusters, Washers for rinsing Cloths, Dolly Washers for Hosiery Goods, Steam Boxes,
PATENT ROTARY FULLING MILLS,
Regulators, Hammer Falling Stocks Fulling Mills, Gate Screws for Hoisting Gates, Elevators, etc.

AND

Dye Tubs, Blue Vats, Wool Washers for Washing Wool, Grist Mills, Upright and Circular Saw Mills,
WOODWORTH'S PLANING MACHINES,
Gigs, Shafting, Pulleys, Gearing, etc.
Every description of Castings furnished at Short Notice.

ALSO,

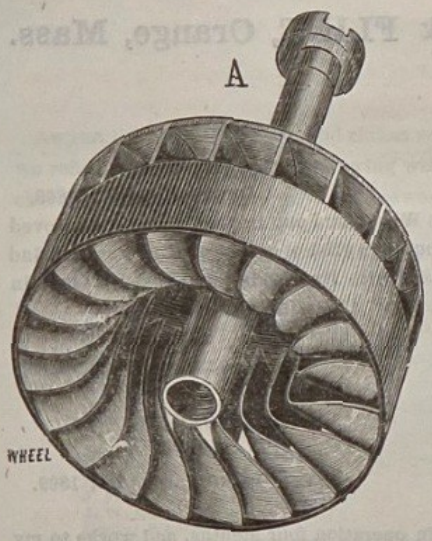
IRON FOUNDERS.

HUNT'S DOUBLE ACTING TURBINE WATER WHEELS,

MACHINES AND CASTINGS FURNISHED AT THIS ESTABLISHMENT, WARRANTED.

Hunt's Double Acting Turbine Water Wheel,

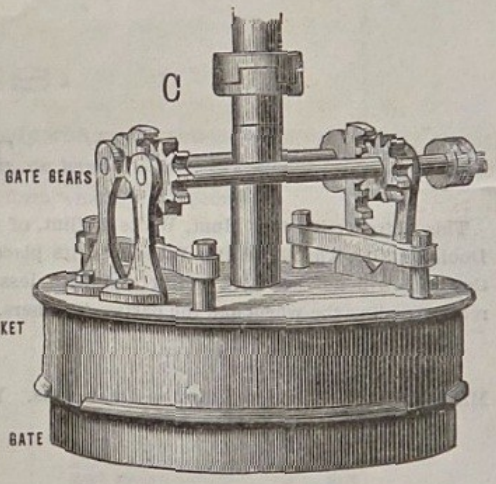
Patented June 15, 1869, and awarded a Silver Medal by the Massachusetts Charitable Mechanic Association, September, 1869.

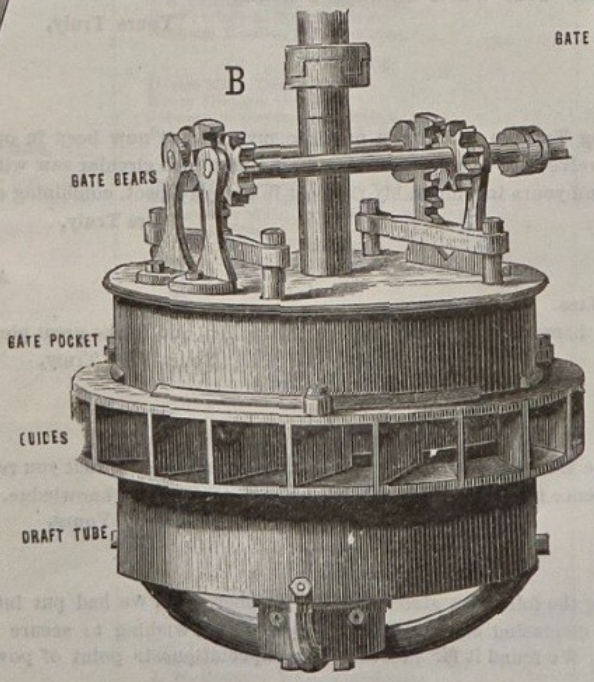


A View of Wheel, showing the arrangement and style of its *Buckets.*

B Perspective view of Turbine complete, with Gate partially opened.

C View of the Concentric Gate, Gate Pocket, and Arrangement for Hoisting Gate.





It is well known to every owner of water power, and to all interested in Hydraulics, that there has been quite an advance in the utility and efficiency of *Turbines during the past few years.*

Numerous Patents have been granted for what have been termed "new and useful improvements" in Turbines, but these improvements have been so detached, or so connected with errors in principle, that the highest utility and advantage has not been secured.

Made familiar with the wants of Mill owners and those using water power, by an extended experience, it has been a great desideratum with the subscribers to introduce to the public a TURBINE which *should combine every essential* requisite of a perfect wheel, without any of the disadvantages and decided defects common to the majority of Turbines. As the result of their efforts, obtained by a long series of experimental investigations of the power and effect of water in motion, and by practical tests, the subscribers offer to the public HUNT'S DOUBLE ACTING TURBINE WATER WHEEL; which not only by its dynamical results, but by its admirable operations when applied *practically to propel machinery,*— the best of all tests,—is proving itself to be equal in all respects to the best, and in some, superior to any other wheel in use. The patentee, with over thirty years' practical experience to aid him, has aimed to secure, in the highest perfection, the following

SPECIAL POINTS OF ADVANTAGE.

First. — The greatest economy of water, and the highest ratio of useful effect.

Second. — The nearest corresponding percentage of power from the water used with part gate as with full gate.

Third. — Durability, simplicity, and freedom from liability to get out of repair. The wheel is also not liable to be choked by anchor-ice or affected by backwater, except by loss of head. The gate is simple and durable in its construction, and very easily operated. For steadiness of motion, this wheel cannot be excelled, and being very easily regulated, it gives, when laboring under a variable load, a remarkable uniformity of speed.

How fully these grand essentials have been secured in HUNT'S DOUBLE ACTING TURBINE WATER WHEEL we leave it with our numerous patrons to answer; and we beg leave to say to all interested, and all contemplating putting in new water wheels, that we are prepared to demonstrate to them that our wheel possesses in the most perfect combination these high points of excellence.

AS CONSIDERATIONS OF IMPORTANCE, we would mention that we warrant all our work, and GUARANTEE perfect satisfaction.

Our wheels are made in the most substantial manner of iron or brass. We put in more weight than most manufacturers, and consequently give increased strength and durability, and always endeavor to have the workmanship of each wheel exact and perfect.

The foregoing considerations, we judge, will be sufficient inducements to lead all looking for a Turbine which will give them perfect satisfaction to investigate the claims and merits of our wheel before purchasing any other, assured that they will find it for their interest and advantage.

All letters of inquiries for particular information will receive prompt and careful attention, for which please address

HUNT, WAITE & FLINT, Orange, Mass.

TESTIMONIALS.

DEDHAM, Sept. 1, 1868.

This is to certify, that Hunt, Waite & Flint, of Orange, Mass., took out of my factory the Breast Wheel, and put in two of their Improved Double Acting Turbine Water Wheels in its place, thinking it might require both to do the work; but on a trial of more than six weeks, I find that one will do the work better and with less water than the Breast Wheel. I am much pleased with its working and take pleasure in recommending the wheel and the parties to others.

THOMAS BARROWS.

WARE, Aug. 2d, 1868.

MESSRS. HUNT, WAITE & FLINT: — DEAR SIRS. Your Wheel works to a charm.

Yours Truly,

D. HOLDEN.

WEST ORANGE, JAN. 1st, 1868.

MESSRS. HUNT, WAITE & FLINT:

GENTS: — The 36-inch Hunt's Double Acting Turbine which you put into my mill has now been in operation four months, and works to my entire satisfaction. With half gate under twelve feet head, it drives a forty-eight inch circular saw with sufficient power for the hardest logs. I have tried quite a number of wheels, and find yours incomparably the best in every respect, combining every essential requisite.

Yours Truly,

JOHN ORCUTT.

ATHOL DEPOT, MASS., Nov. 26, 1868.

MESSRS. HUNT, WAITE & FLINT, ORANGE, MASS.

GENTS: — Your Patent Water Wheel, I am happy to say, gives entire satisfaction, and I take great pleasure in recommending it to the public as a first class Water Wheel.

Yours Very Truly,

J. C. HILL.

NORTH LEVERETT, Dec. 21, 1868.

MESSRS. HUNT, WAITE & FLINT:

GENTLEMEN: — The Double Acting Turbine Water Wheel, which you put in for me, does all that you recommended, and I take great pleasure in giving my testimony in its favor, in preference to any other wheel that has come within my knowledge.

Respectfully Yours,

G. N. WATSON.

MESSRS. HUNT, WAITE & FLINT:

GENTLEMEN: — We take pleasure in making the following statement: In October, 1868, we had put into our mill in Erving, one of your 36 inch Double Acting Turbine Water Wheels, displacing an Iron Turbine nearly new, wishing to secure the greatest economy of water, as we have a small stream, and about 12 feet head. We found it far exceeded our expectations in point of power and economy of water. With part

gate, we have ample power to drive our 48-inch Circular Saw through our hardest logs, and at the same time drive our up-and-down saw, and all our cutting-off saws. We were so pleased with its operation, that in May last we displaced another iron turbine at our mill in Bernardston, and put in its place another of your 36-inch Turbines. At this mill, we have 10 1-2 ft. head; and although we were expecting much from your wheel here, from a practical knowledge of its working in our mill in Erving, yet in this second test, it has in no wise disappointed us, but rather the more fully assured us that Hunt's Double Acting Turbine Water Wheel is the most economical and powerful wheel of which we have any knowledge.

GREENFIELD, MASS., Nov. 5, 1869.

JAMES NEWTON.
D. H. NEWTON.

MESSRS. HUNT, WAITE, FLINT:

ALSTEAD, N. H., Dec. 27th, 1869.

GENTLEMEN:—I have my Circular Saw-mill and Water Wheel in operation, and am well pleased with them. I think that Hunt's Double Acting Turbine Water Wheel cannot be beat. I have nine feet head, and your 42-inch wheel with part gate, gives me all the power that I want. I am highly pleased with it, and am satisfied that it will do more work than any other wheel with the same amount of water.

Yours Truly,

J. P. FORRISTALL.

MESSRS. HUNT, WAITE & FLINT: GENTS:—This is to certify that Hunt's Double Acting Turbine Water Wheel, which you put into our factory last fall, is doing its work to our entire satisfaction.

BARRE, MASS., Dec. 14, 1869.

Yours Truly,

C. W. & J. E. SMITH.

MESSRS. HUNT, WAITE & FLINT:

ASHUELOT, Dec. 23, 1869.

GENTLEMEN:—Your wheel has fully met our expectation; thus far, we believe that we have double the power that we had from the one taken out with the same amount of water.

Yours Truly,

BALL, PRATT & TURNER.

REFERENCES.

AWARE that the assertions and claims set forth in a circular should be, and are, received justly with much caution by a discriminating public we refer by permission to the following well known parties who are either using our wheels, or have a full and personal knowledge of the character of our work, and who can answer for our responsibility, integrity, and ability to perform whatever we promise.

MASSACHUSETTS.

Thomas Barrows, Dedham,
C. W. & J. E. Smith, Barre,
John C. Hill, Athol Depot,
James Newton, Greenfield,
D. H. Newton, "
G. N. Watson, North Leverett,
John Orcutt, West Orange,
John Russell, Greenfield,
William B. Washburn, "
Theodore Leonard, "
D. Holden, Ware,
George Blackburn, Boston,
Dale Brothers, "
Nevins & Co., "
J. P. Bradley, "
J. W. Edmonds, "
George Wheelwright, "
John Gardner, Treasurer of Saulisbury Mills,
Sumner Pratt, Worcester,
Joseph Chase, "
Samuel L. Hodges, "
John A. Hunt, "
E. D. Thayer, "
Ivers Philips, "
Clappville Mills, Clappville,
Lawrence Manufacturing Co., Lowell,
Livingston, Carter & Co., "
Middlesex Co., "
W. T. Salmon, "
Edward Barrows, "
Charles Stott, "
Suffolk Mills, "
Tremont Mills, "
Pemberton Co., Lawrence,
T. E. Clark, "
A. Maynard, Assabet,
Hyde Park Woollen Co., Hyde Park,
M. D. F. Stears, Salisbury,
Levi Haywood, Gardner,
C. J. Delehanty, Fitchburg,
W. H. Vose, "
George Whitney, Royalston,
James Shaw, Ballard Vale,
Marland Manufacturing Co., Andover,
N. W. Frye, "
Ætna Mills, Waltham,
Winona Mills, West Danvers,
Pontoosuc Woollen Co., Pittsfield,
J. R. & J. Smith, Cherry Valley,
Ashworth & Jones, " "
Pittsfield Woollen Co., Pittsfield,
O. S. Tillotson, "

MASSACHUSETTS.

J. Beebe, Holyoke,
O. H. Perry, Andover,
George H. Gilbert & Co., Ware,
North Adams Woollen Co., North Adams,
Blackington & Phillips, North Adams,
Blackington & Son, "
Rays Woollen Co., South Bellingham,
C. Alden, Springfield,
S. S. Crocker & Co., Leominster,
B. W. Gleason, Rock Bottom,
Methuen Woollen Mill, Methuen.

MAINE.

Dexter Mills, Dexter,
Henry Hudson, Guilford.
Johnson, Fuller & Co., Camden,
Bates Manufacturing Co., Lewiston.

NEW HAMPSHIRE.

Ball, Pratt & Turner, Ashuelot,
J. P. Forristall, Alstead,
Winchester Mills, Ashuelot,
D. Ball & Son, "
J. D. Startevant, Rochester,
M. Harris & Co., Harrisville,
H. V. Whitehouse, Gonic,
D. Henshaw Ward, Keene,
Great Falls Woollen Co., Somerworth,
Franklin Falls Co., Franklin,
Belknap Mills, Laconia,
S. A. & G. Sawyer, Dover,
Hallo, Frost & Co., Hinsdale,
West Concord Manf. Co., W. Concord.

VERMONT.

S. Wright, 2d., Pownal,
Geo. L. Balcom, Proctersville,
Geo. S. Hopkins, Middlebury,
James Filton, Cavendish,
Caledonia Woollen Co., Barnett,
Benjamin Greenbank, Danville,
Bessey & Brothers, Enosburgh,
Solomon Woodward, Woodstock.

RHODE ISLAND.

Babcock & Morse, Westerly,
Stillman & Co., "
E. H. Babcock, "
Berry & Stanton, Woodville,
Belleville Manufacturing Co., Wickford,
J. W. Campbell & Co., Providence,

RHODE ISLAND.

Niantic Woollen Co., Dorriville.
James Legg & Co., Mapleville,

CONNECTICUT.

A. & C. J. King, Lisbon,
Home Woollen Co., "
Elting Woollen Co., Norwich,
John Batchelder, "
F. Foster, Moosup,
James Petrie, Baltic,
Mystic Woollen Co., Mystic,
Dean & Lamonte, Bridgeport,
Mill Brook Woollen Mill, South Coventry,
Rock Manufacturing Co., Rockville,
Florence Mills, "

NEW YORK.

Baldwinville Woollen Mills, Baldwinville,
A. R. Spooner, Whitehall,
A. E. Stimpson, Cohoes,
C. H. Adams, "
E. & R. Spaulding, North Hoosac,
Mantana Mills Co., Cornwall,
Glenville Mills, Port Chester,
Steam Woollen Co., Catskill,
Stitt & Underhill.

PENNSYLVANIA.

H. S. & F. W. Huldekoper, Meadville,
Jefferson Manufacturing Co., Philadelphia,
J. M. Mitchell & Co., "
Fairview Manufacturing Co., Fairview,
Union Woollen Mills, Alleghany.

ILLINOIS.

Hanover Woollen Mills, Hanover,
Knox, Brown & Co., Chicago.

OREGON.

Eagle Woollen Manuf. Co., Brownville.

MICHIGAN.

Ypsilanti Woollen Co., Ypsilanti.

CALIFORNIA.

W. O. M. Berry, San Francisco.

CANADA.

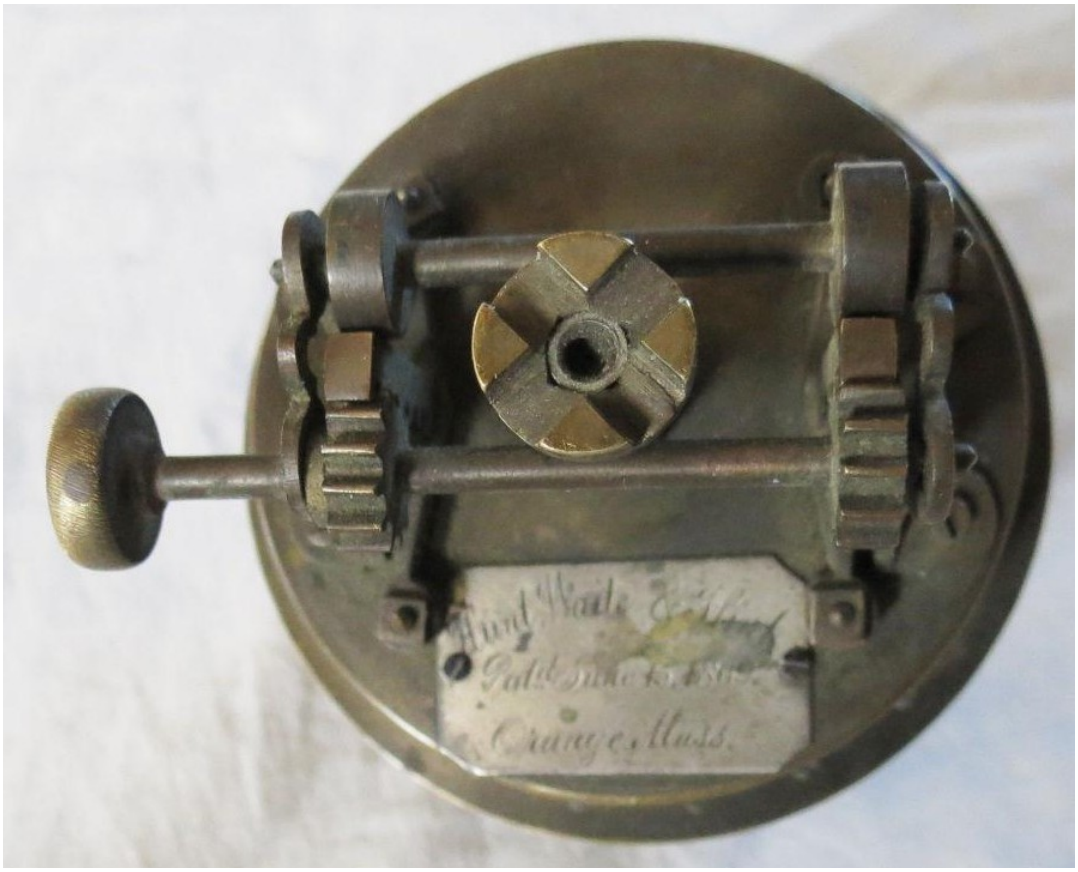
Paton Manufacturing Co., Sherbrooke,
Cornwall Manufacturing Co., Cornwall,
B. & R. Rosamond, Almonte,
Geo. Hespeler, Hespeler,
Barber & Brothers, Streetsville.

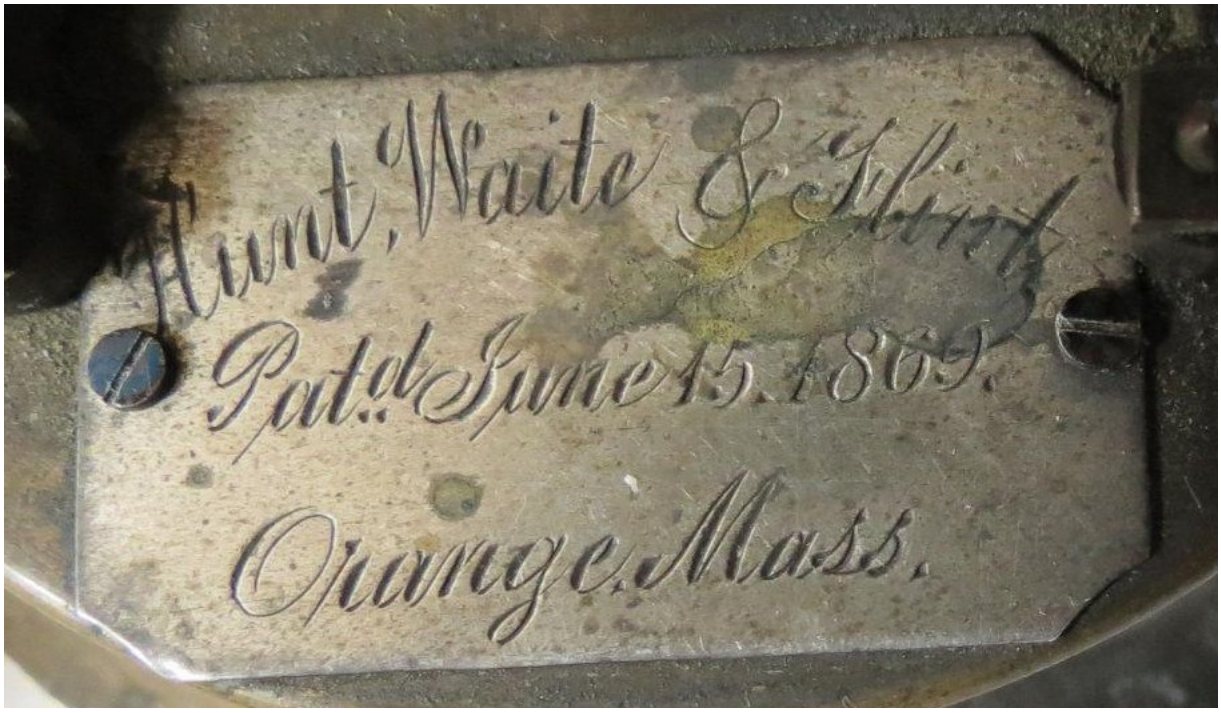
THE FOLLOWING TABLE

Was calculated expressly for HUNT'S DOUBLE-ACTING TURBINE WATER-WHEEL, and contains the diameter of each wheel in inches; number of square inches of water used by each wheel; the number of horse-power; the cubic feet of water used per minute, and the number of revolutions per minute made by each sized wheel for any head from four to twenty-five feet.

Price.	Diameter of Wheel in Inches.	Square Inches Water used.	Horse Power, Cubic Feet and Revolutions.	HEAD IN FEET.																				
				4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
$250	12	18	H. P.,	.76	1.07	1.41	1.79	2.18	2.60	3.05	3.51	3.99	4.51	5.06	5.60	6.17	6.78	7.38	8.01	8.68	9.32	10.0	10.65	11.35	12.11
			C. F.,	120	134	147	159	170	180	190	199	208	216	225	232	240	248	255	262	269	275	282	288	294	301
			Rev.,	239	246	252	272	291	319	325	341	356	371	385	398	412	424	436	449	460	472	482	493	505	515
300	18	43	H. P.,	1.84	2.58	3.98	4.28	5.74	6.25	7.33	8.43	9.60	10.84	11.09	13.42	14.81	16.20	17.77	10.17	20.76	22.18	23.87	25.50	27.20	28.98
			C. F.,	287	321	351	380	406	431	455	476	497	518	537	556	575	592	609	627	642	658	674	689	704	718
			Rev.,	155	162	168	181	193	206	217	227	237	247	256	265	274	283	291	299	306	314	322	329	336	343
350	24	81	H. P.,	3.47	4.87	6.40	8.06	9.85	11.90	13.77	15.88	17.63	20.42	22.83	25.31	27.89	30.48	33.29	36.09	38.98	41.91	44.93	48.05	51.38	54.40
			C. F.,	540	605	663	716	765	822	856	897	913	976	1,013	1,048	1,083	1,114	1,149	1,180	1,211	1,240	1,269	1,298	1,330	1,352
			Rev.,	112	119	125	135	145	153	162	170	178	184	192	199	206	211	218	224	229	236	240	246	252	257
400	30	118	H. P.,	5.07	6.96	9.31	11.75	14.35	17.11	20.07	23.20	26.36	29.75	33.25	36.87	40.64	44.50	47.58	52.58	56.79	61.08	65.47	70.02	74.54	79.33
			C. F.,	788	881	965	1,043	1,115	1,18	1,247	1,307	1,365	1,422	1,475	1,527	1,578	1,626	1,673	1,719	1,764	1,807	1,849	1,891	1,932	1,972
			Rev.,	87	94	100	108	115	123	129	136	142	147	153	159	164	169	174	179	183	188	192	197	201	204
450	36	172	H. P.,	7.38	10.34	13.48	17.13	20.94	24.96	29.26	33.75	38.44	43.38	48.45	53.75	59.23	64.86	70.67	76.64	82.81	89.02	95.49	102.0	109.05	115.65
			C. F.,	1,148	1,285	1,397	1,521	1,626	1,723	1,818	1,906	1,990	2,073	2,150	2,226	2,300	2,370	2,439	2,506	2,572	2,633	2,695	2,756	2,816	2,874
			Rev.,	71	78	84.2	90.9	97.1	103	108	113	118	123	127	132	136	141	145	148	153	156	161	164	168	171
575	42	236	H. P.,	10.14	14.17	18.64	21.02	28.71	33.72	40.12	46.27	52.70	59.45	66.17	73.67	81.22	88.95	96.87	105.10	113.49	122.03	130.90	139.85	148.38	158.72
			C. F.,	1,575	1,761	1,929	2,084	2,229	2,363	2,492	2,613	2,728	2,841	2,936	3,051	3,153	3,250	3,343	3,436	3,525	3,610	3,696	3,777	3,866	3,944
			Rev.,	59	66	72.0	77.8	83.1	88.1	92.9	97.5	101	106	109	113	117	120	124	127	130	134	137	141	143	146
700	48	302	H. P.,	12.97	18.13	23.80	30.04	36.71	43.81	51.34	59.21	67.46	76.11	85.0	94.29	106.93	113.81	124.03	134.24	145.26	156.18	167.59	179.62	190.85	203.08
			C. F.,	2,016	2,254	2,468	2,667	2,851	3,024	3,189	3,344	3,492	3,637	3,772	3,905	4,035	4,159	4,280	4,397	4,512	4,620	4,729	4,835	4,940	5,046
			Rev.,	50	57	63.0	68.0	72.8	77.1	81.3	85.3	89.1	92.8	96.4	99.7	103	106	109	112	114	117	119	123	125	128
1050	54	378	H. P.,	18.71	22.81	29.86	37.65	45.98	54.86	64.31	74.19	84.46	95.32	106.50	118.10	130.15	142.52	155.32	167.51	181.95	195.63	209.78	224.23	239.07	254.19
			C. F.,	2,525	2,824	3,092	3,341	3,571	3,787	3,995	4,188	4,372	4,555	4,725	4,891	5,053	5,208	5,360	5,507	5,651	5,787	5,923	6,056	6,188	6,316
			Rev.,	43	50	56.5	61.2	64.5	69.4	73.1	76.6	80.1	83.5	86.7	89.7	92.6	95.4	99.1	100	103	106	109	111	113	115
1300	60	518	H. P.,	22.28	31.13	40.90	51.57	63.04	75.16	88.06	101.60	115.68	130.56	145.86	161.75	178.19	195.27	212.75	231.20	249.20	267.96	287.51	307.13	328.10	348.37
			C. F.,	3,460	3,868	4,235	4,577	4,893	5,181	5,472	5,737	5,990	6,239	6,472	6,700	6,922	7,135	7,342	7,543	7,740	7,927	8,113	8,295	8,476	8,656
			Rev.,	37	44	50.0	54.4	57.1	61.7	65.0	68.0	71.2	74.2	77.0	79.7	82.3	84.8	87.0	89.7	92.0	94.3	96.5	98.6	100	102
1800	72	648	H. P.,	27.87	38.96	51.18	64.56	78 85	94.06	110.41	127.14	144.82	163.40	182.03	202.47	223.15	244.40	266.27	288.77	311.87	335.40	359.61	384.37	409.86	425.76
			C. F.,	4,329	4,841	5,300	5,728	6,123	6,493	6,859	7,180	7,497	7,808	8,100	8,385	8,664	8,929	9,189	9,441	9,688	9,921	10,154	10,381	10,608	10,828
			Rev.,	29	36	42.1	45.8	48.6	51.5	54.3	57.0	59.4	61.9	64.2	66.5	68.7	71.8	72.9	74.8	76.8	78.7	80.6	82.4	84.2	87.0

Salesman's Sample:





Reference for name change:

Martha Elizabeth, daughter of Jehiel and Melissa (Hildreth) Todd, born Sept. 5, 1841, in Boston. He was fitted for college in the Lawrence Academy in his native town, and in the autumn of 1859 entered the freshman class of Williams College, but remained there only one year. Then he attended the Albany Law School and was admitted to the bar in that city. Soon after, while studying the Massachusetts code of laws, preparatory to practice, the Civil war broke out; he was one of the first to respond to the call for troops, and, as a member of company B of the 6th Mass. regiment, was in the march through Baltimore, April 19, 1861. Returning to Massachusetts, he worked to promote enlistments and finally went out again himself in troop C, 3d R. I. cavalry, in which he became a sergeant, and on Oct. 13, 1863, was mustered into the U. S. service. March 25, 1864, he was commissioned as second lieutenant and assigned to duty in troop L of the same regiment. After serving a year he resigned his commission, March 20, 1865, and was honorably discharged.

Soon after the close of the war he went to Orange, and entered the office of Hunt, Waite & Flint. The firm was changed in 1872 to the Rodney Hunt Machine Company, of which he became secretary, a position he held until his death, and for a long time was one of the directors.

Miscellaneous:

FIG. 2. BLAKE WHEEL.

FIG. 5. HUNT WHEEL (Old Pattern).